Amendments to the Claims:

This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1 (Currently Amended): An anti-ferromagnetically coupled, granular-continuous ("AFC-GC") magnetic recording medium ~~simultaneously exhibiting increased thermal stability, writability, and signal-to-medium noise ratio ("SMNR")~~, comprising a layer stack formed on a surface of a non-magnetic substrate and including:

(a) a continuous ferromagnetic stabilizing layer;

(b) a non-magnetic spacer layer; and

(c) a granular ferromagnetic layer; wherein:

(i) said continuous ferromagnetic stabilizing layer and said granular ferromagnetic layer are anti-ferromagnetically coupled across said non-magnetic spacer layer, the amount of anti-ferromagnetic coupling preselected to ensure magnetic relaxation after writing;

(ii) lateral interactions in said granular, ferromagnetic recording layer are substantially completely eliminated or suppressed; and

(iii) the exchange coupling strength in said continuous, ferromagnetic stabilizing layer is preselected to be ~~slightly~~ larger than the strength of the anti-ferromagnetic coupling provided by

the non-magnetic spacer layer to thereby enhance thermal stability of the recording bits.

2 (Original): The AFC-GC medium as in claim 1, wherein:

said continuous ferromagnetic stabilizing layer is proximal said substrate and said granular ferromagnetic layer is distal said substrate.

3 (Original): The AFC-GC medium as in claim 1, wherein:

said granular ferromagnetic layer is proximal said substrate and said continuous ferromagnetic stabilizing layer is distal said substrate.

4 (Original): The AFC-GC medium as in claim 1, wherein:

said continuous ferromagnetic stabilizing layer and said granular ferromagnetic layer each comprise a plurality of magnetic grains each having a magnetic moment.

5 (Original): The AFC-GC medium as in claim 4, wherein:

the magnetic moments of each of said magnetic grains of said continuous ferromagnetic stabilizing and granular ferromagnetic layers are aligned parallel to said surface of said substrate, and said medium is a longitudinal medium.

6 (Original): The AFC-GC medium as in claim 4, wherein:

the magnetic moments of each of said magnetic grains of said continuous ferromagnetic stabilizing layer are aligned parallel to said surface of said substrate the magnetic moments of each of said magnetic grains of said granular ferromagnetic layer are aligned at an angle to said surface of said substrate, and said medium is a longitudinal "tilted" medium.

7 (Original): The AFC-GC medium as in claim 4, wherein:

the magnetic moments of each of said magnetic grains of said continuous ferromagnetic stabilizing and granular ferromagnetic layers are aligned normal to said surface of said substrate, and said medium is a perpendicular medium.

8 (Original): The AFC-GC medium as in claim 4, wherein: the magnetic moments of each of said magnetic grains of said continuous ferromagnetic stabilizing and granular ferromagnetic layers are aligned at an angle to said surface of said substrate, and said medium is a perpendicular "tilted" medium.

9 (Original): The AFC-GC medium as in claim 1, wherein:

said continuous ferromagnetic stabilizing layer (a) comprises a material selected from the group consisting of: Co-based alloys, Fe-based alloys, and multi-layer superlattice structures.

10 (Original): The AFC-GC medium as in claim 9, wherein:

said continuous ferromagnetic stabilizing layer (a) comprises a CoCrX alloy, where X is at least one element selected from the group consisting of: Pt, Fe, Tb, Ta, B, C, Mo, V, Nb, W, Zr, Re, Ru, Ag, Hf, Ir, Si, and Y.

11 (Original): The AFC-GC medium as in claim 1, wherein:

said non-magnetic spacer layer (b) comprises a material selected from the group consisting of: Ru, Rh, Ir, Cr, Cu, and alloys thereof.

12 (Original): The AFC-GC medium as in claim 11, wherein:

said non-magnetic spacer layer (b) comprises a material selected from the group consisting of: Ru and CrMo.

13 (Original): The AFC-GC medium as in claim 1, wherein:

said granular ferromagnetic layer (c) comprises a CoCrPt-X' material, where X' is selected from the group consisting of: oxides, nitrides, and carbides, and adjacent magnetic grains are substantially magnetically isolated from each other.

14 (Original): The AFC medium as in claim 13, wherein:

said granular ferromagnetic layer (c) comprises a material selected from the group consisting of: CoCrPt-SiO_2, CoCrPt-SiN_x, and CoCrPt-SiC.

15 (Original): The AFC-GC medium as in claim 1, wherein:

said continuous ferromagnetic layer (a) is from about 10 to about 30 nm thick;

said non-magnetic spacer layer (b) is up to about 2 nm thick;

said granular ferromagnetic layer (c) is from about 15 to about 60 nm thick;

and the medium supports areal recording densities from about 150 to about 350 gbit/in^2.

16 (Original): The AFC-GC medium as in claim 1, wherein:

said continuous ferromagnetic stabilizing layer (a) is from about 10 to about 20 nm thick;

said non-magnetic spacer layer (b) is up to about 2 nm thick;

said granular ferromagnetic (c) is from about 10 to about 30 nm thick;

and the medium supports areal recording densities from about 150 to about 350 gbit/in^2.

17 (Original): The AFC-GC medium as in claim 1, wherein said medium is a perpendicular medium and said layer stack further comprises:

(d) a magnetically soft underlayer.

18 (Original): The AFC-GC medium as in claim 17, wherein:

said magnetically soft underlayer (d) is from about 100 to about 500 nm thick and comprised of at least one soft magnetic material selected from the group consisting of: Ni, NiFe (permalloy), Co, CoZr, CoZrCr, CoZrNb, CoFeZrNb, CoFe, Fe, FeN, FeSiAl, FeSiAlN, FeCoB, and FeCoC.

19 (Original): The AFC-GC medium as in claim 1, wherein said layer stack further comprises:

(e) at least one seed layer below said continuous ferromagnetic stabilizing layer.

20 (Original): The AFC-GC medium as in claim 19, wherein:

said at least one seed layer (e) comprises at least one material selected from the group consisting of: Ti, Ni, Cu, Mg, CoZr, FeHfN, Ag, Cr, and SiN.

21 (Original): The AFC-GC medium as in claim 1, wherein said medium is a longitudinal medium and said layer stack further comprises:

(f) at least one non-magnetic interlayer.

22 (Currently Amended): The AFC-GC medium as in claim [[1]] 21, wherein:

said at least one non-magnetic interlayer (f) comprises at least one non-magnetic material selected from the group consisting of: Ru, TiCr, Ru/CoCrPt, and RuCr/CoCrPt.

23 (Original): The AFC-GC medium as in claim 1, wherein:

said non-magnetic substrate comprises a non-magnetic material selected from the group consisting of: Al, Al-based alloys, NiP-plated Al, other non-magnetic metals, other non-magnetic metal alloys, glass, ceramics, glass-ceramics, polymers, and laminates and composites thereof.

24 (Original): The AFC-GC medium as in claim 1, further comprising:

(g) a protective overcoat layer on said granular, ferromagnetic recording layer; and

(h) a lubricant topcoat layer on said protective overcoat layer.

25 (Original): The AFC-GC medium as in claim 24, wherein:

said protective overcoat layer (g) comprises a carbon-based material; and

said lubricant topcoat layer (h) comprises a perfluoropolyether material.